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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,696	12/01/2003	Toshiya Hataguchi	70021172-1	2553
7590 06/02/2005 AGILENT TECHNOLOGIES, INC. Legal Department, DL 429 Intellectual Property Administration P.O. Box 7599 Loveland, CO 80537-0599			EXAMINER WYATT, KEVIN S	
			ART UNIT 2878	PAPER NUMBER
DATE MAILED: 06/02/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/725,696	HATAGUCHI ET AL.	
	Examiner	Art Unit	
	Kevin Wyatt	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

1. Figs. 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 7, line 4, the term "said stripes" does not specifically state which stripes are illuminated. It should be stated whether stripes of the first track or second track should be illuminated. In claim 7 line 6, the term "said light source" should specify whether first light source or second light source provides light to second photodetector. In claim 7 line 7, the

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term "said reflective stripes" should specify whether "first said reflective stripes" or "second said reflective stripes" are reflecting light. Also, in claim 7 line 7, the term "said photodetector" should specify whether "first photodetector" or "second photodetector" is used.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Rothamel (U.S. Patent No. 6,639,206 B1).

Regarding claim 1, Rothamel shows in Fig. 1 a drum (7) comprising a cylindrical surface (5), a first track (10) comprising reflectors (2) evenly spaced apart around cylindrical surface, a first light source (1) that illuminates reflectors at an opaque angle relative to normal, and a first photodetector (3) positioned to receive reflected light from reflectors during rotation of drum.

Regarding claim 5, Rothamel discloses in Fig. 1 a cylindrical surface (5) which lies between first track (10) and axis (8).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rothamel (U.S. Patent No. 6,639,206 B1) in view of Chen (U.S. Patent No. 6,817,528 B2).

Regarding claim 2, Rothamel discloses the claimed invention as stated above. Rothamel does not disclose a light source that emits a collimated beam of light. However, Chen shows in Fig. 1 an apparatus comprising two collimating lenses (212 and 214) converting light emitted from two light sources (202 and 204) into two collimated beams of light (col. 6, lines 36-38). It would have been obvious to one skilled in the art to provide in Rothamel collimated lenses to collimate light rays for each light source for the purpose of maintaining alignment of active lighting area with the area of photodetector during drum rotation.

8. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothamel (U.S. Patent No. 6,639,206 B1) in view of Suganuma (U.S. Patent No. 6,448,996 B2).

Regarding claims 3 and 4 Rothamel discloses the claimed invention as stated above. Rothamel does not disclose a drum rotated by a shaft that is coincident to said axis. Suganuma discloses in Fig1. a drum (14) which rotates

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about its own axis by means of a rotating shaft (18) which coincides with drum's axis (col. 8 lines 24-31). It would have been obvious to one skilled in the art to provide the shaft of Suganuma to device of Rothamel for the purpose of rotating the drum of Rothamel.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rothamel (U.S. Patent No. 6,639,206 B1).

Regarding claim 6, Rothamel discloses the claimed invention as stated above. Rothamel does not disclose a track that lies between a cylindrical surface and said axis. It would have been obvious to one skilled in the art to rearrange components of encoder by placing the encoder tracks between cylindrical surface and said axis for the purpose of providing a more compact design.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rothamel (U.S. Patent No. 6,639,206 B1) in view of Karim-Panahi (U.S. Patent No. 5,4338,882).

Regarding claim 7, Rothamel discloses the claimed invention as stated above. However, Rothamel does not disclose a second track comprising alternating reflective and non-reflective stripes arranged on said cylindrical surface, a second light source for illuminating stripes at an opaque angle and a second photodetector positioned to receive reflected light from reflectors which form images of light source on photodetector during rotation of drum. Karim-Panahi shows in Fig1. a rotating shaft comprising two circumferential bands (4 and 4') of reflective marks adhered to cylindrical surface (column lines 66-68 and column 4, lines 1-9). Karim-Panahi also shows in Fig1. two photodetectors (8 and

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8') designed to receive reflected light from light source (5 and 5', disclosed in col. 4, lines 10-11 but not labeled in Fig1.). It would have been obvious to one skilled in the art to provide in Rothamel a second track of alternating reflective non-reflective stripes, a second light source and a second photodetector for the purpose of collecting more data on the periodic motion of rotating member.

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rothamel (U.S. Patent No. 6,639,206 B1) in view of Karim-Panahi (U.S. Patent No. 5,4338,882), and Cohen (U.S. Patent No. 4,124,839).

Regarding claim 8, the combination of Rothamel and Karim-Panahi disclose the claimed invention as stated above. This combination does not provide a drum comprising two tracks where the widths of the stripes of the first track are different from the widths of the stripes of the second track. However, Cohen shows in Fig. 4 a cylindrical drum comprising six encoding tracks (170-180) comprising stripes of varying widths. It would have been obvious to one skilled in the art to modify the combination of Rothamel and Karim-Panahi by placing additional encoding tracks on the cylindrical drum as taught by Cohen for the purpose of providing additional encoding data to the system (column 9, lines 23-27).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

John Baxter (Publication No. U.S. 2002/0195551 A1) discloses an angle

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sensor for sensing absolute angular position of a rotatable body.

Michael Germuth-Loffler (U.S. Patent No. 6,45,389 B1) discloses an adaptive absolute steering sensor for the absolute determination of a turning angle.

Dana A. Walker (U.S. Patent No. 5,734,108) discloses a system that detects relative movement between an optical sensor unit and a set of finely spaced parallel grid lines.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Wyatt whose telephone number is (571)-272-5974. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (571)-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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